

SUPPORT FOR THE AMENDMENTS

Applicants have amended Claim 8-13 have been amended for clarity. Accordingly, support for amended Claims 8-13 can be found in the same claims, as previously presented. Support for to the center line average roughness being 0.3  $\mu\text{m}$  or more in Claim 8 can be found on page 42, lines 26-28, of the specification. Applicants have also added new Claims 19-23. Support for new Claim 19 can be found in Claims 1 and 14, as previously presented, and on page 26, line 28, to page 28, line 11, of the specification. Support for new Claims 20-23 can be found in Claims 15-18, as previously presented.

No new matter has been added. Claims 8-13 and 19-23 are active in this application.

REMARKS/ARGUMENTS

Present Claims 8-13 relate to processes for producing coated paper which comprise coating a non-contact coating composition for paper which comprises a pigment (A) on a surface of a base paper by a non-contact coating method, to obtain a coated film; and drying said coated film;  
wherein said base paper has a center line average roughness of 3  $\mu\text{m}$  or less in a frequency region of a spatial frequency of 25 (1/mm) or less and a center line average roughness of 0.3  $\mu\text{m}$  or more in a frequency region of a spatial frequency of 25 (1/mm) or more.

Present Claims 19-23 relate to processes for producing coated paper, comprising:  
coating a non-contact coating composition for paper on a surface of a base paper at a coating speed from 600 to 2,800 m/min by a non-contact coating method, to obtain a coated film; and  
drying said coated film;

wherein said non-contact coating composition for paper comprises a pigment (A), a copolymer latex (B), a wetting agent (C), and a viscosity adjusting agent (D), and said composition has a viscosity of from 50 to 1,500 mPa·s and a dynamic surface tension of from 25 to 45 mN/m at a surface lifetime of 10 ms,

wherein said pigment (A) comprises a fine particle clay (a1), which comprises a component having a particle diameter of less than 2  $\mu\text{m}$  in an amount from 95 to 99% by mass, and a high aspect clay (a2), which comprises a component having a particle diameter of less than 2 pm in an amount from 80 to 89% by mass, and said fine particle clay (a1) and said high aspect clay (a2) are present in a ratio of from 1/3 to 5/1, and said fine particle clay (a1) and said high aspect clay (a2) are present in an amount of 40% by mass or more based on 100% by mass of the total of said pigment (A), and

wherein said copolymer latex (B) has a solid content of from 5 to 30 parts by mass and said wetting agent, (C) is present in an amount of from 0.01 to 2 parts by mass based on 100 parts by mass of the total of said pigment (A).

Thus in the methods of Claims 8-13, the base paper has a “center line average roughness in a frequency region of a spatial frequency of 25 (1/mm) or less” referred to as “Ra1”, and a “center line average roughness in a frequency region of a spatial frequency of 25 (1/mm) or more” referred to as “Ra2”. Applicants have discovered that the presently claimed methods are particularly useful for preparing coated paper. The cited references do not suggest the presently claimed methods or the benefits afforded thereby. Accordingly, these references cannot affect the patentability of the present claims.

Specifically, as explained on page 91 and shown in Table 18, on page 92, the selection of Ra1 and Ra2 provides a significant improvement. Thus, as shown in Table 18, in “Comparative Examples 4-1 and 4-2” where “Ra1” is outside the scope of Claim 8, large amounts of coating defects occurred, while in “Comparative Examples 4-3 and 4-4” where

“Ra2” is outside the scope of Claim 8, a puddling phenomenon occurred when the coating speed was high. On the other hand, in “Examples 4-1” to “4-6”, coated paper excellent in productivity and product quality may be produced.

Based on these results, the methods of Claims 8-13 have characteristics in using base paper having “Ra1” and “Ra2” in the specific ranges.

The rejection of Claims 8-18 under 35 U.S.C. § 103(a) in view of U.S. Patent Application Publication No. 2005/0039871 (Urscheler et al.) in view of JP 05-179599 (Ishikawa et al.) is respectfully traversed. Urscheler et al. discloses certain processes for making coated paper. However, this reference does not describe “Ra1” and “Ra2”. Further, this reference does not describe technical knowledge as to a relation between the surface roughness of base paper and working-effect.

Thus selecting a base paper having “Ra1” and “Ra2” in the specific ranges provides an improvement which could not have been expected based on the teachings of the cited references. Moreover, there is nothing in either of the cited references which would suggest that adjusting “Ra1” and “Ra2” would be effective improving the properties of the coated paper. It is well settled that one of skill in the art would not be motivated to adjust or optimize a parameter in the absence of a teaching that the parameter is a result-effective variable. *See, In re Antonie*, 559 F2d 618, 195 USPQ 6 (CCPA 1977), copy attached. Thus, one of skill in the art would not have been motivated to adjust “Ra1” and “Ra2” by the cited references.

For all of these reasons, the rejection should be withdrawn.

Claims 19 to 23:

The method of these claims uses a composition which comprises a wetting agent (C) and a viscosity adjusting agent (D) and has a viscosity of from 50 to 1,500 mPa•s and a dynamic surface tension of from 25 to 45 mN/m at a surface lifetime of 10 ms.

Urscheler et al. does not disclose a composition having a dynamic surface tension at a surface lifetime of 10 ms. Further, this reference does not disclose using a wetting agent (C) and a viscosity adjusting agent (D) in combination.

Ishikawa et al. discloses a latex for paper coating specifying a glass transition temperature (Claim 1). However, this Reference 2 does not disclose the viscosity and the dynamic surface tension of the latex for paper coating. Further, this reference does not disclose using a wetting agent (C) and a viscosity adjusting agent (D) in combination.

In contrast, the methods of Claims 19-23 comprise a configuration of the above-described difference, thus producing the working effects that curtain coating with high-speed may be attained and that can obtain coated paper having good quality with good productivity, may be obtained (*see*, paragraph [0010] of the present specification).

As shown in Table 13, in “Examples 3-1 to 3-5”, where the content of component (C) and component (D) is within the scope of Claim 19 (where component (C) and component (D) are contained and the dynamic surface tension and the viscosity are within the scope of Claim 19), the coating operation could be effected at a speed defined in the present application invention.

On the other hand, as shown in Table 14, in “Comparative Examples 3-4 and 3-5”, where the content of component (C) and the dynamic surface tension are outside the scope of Claim 19 and “Comparative Examples 3-1 to 3-3”, where the content of component (D) and the dynamic surface tension are outside the scope of Claim 19, the coating operation could not be effected at a speed defined in the present application invention.

Thus in order to obtain a coated paper having high quality with high productivity, using component (C) and component (D) in combination, and using a coating composition for paper having a dynamic surface tension at a surface lifetime of 10 ms and a viscosity in the

specific ranges are not matters that could be easily conceived easily by a person skilled in the art.

Accordingly, Claims 19-23 are also patentable over the cited references.

Applicants submit that the present application is now in condition for allowance, and early notification of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



---

Stephen G. Baxter  
Attorney of Record  
Registration No. 32,884

Customer Number  
**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220